

Re: Name of a distribution.

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On 30 ec, 13:42, "Diamond, Mark" <d...@xxxxxxxx> wrote:

I am looking for the name of a kind of distribution, or alternatively some indication about how I would search for information on the distribution. However, because I lack exactly that information, all I can do is describe how to construct the distribution in which I'm interested.

So here goes ... first a rather poor generalization and then a specific example.

If you allocate n marbles to n boxes, with the box for each of the n marbles being chosen uniformly and at random from the n boxes, the what is the "expected ranked allocation" of marbles in the boxes?

If I allocate three marbles to three boxes, they might be allocated $\{1,1,1\}$, with probability $2/9$; $\{0,1,2\}$, $\{0,2,1\}$, $\{1,0,2\}$, $\{1,2,0\}$, $\{2,0,1\}$, $\{2,1,0\}$, *each* with probability $1/9$; or $\{0,0,3\}$, $\{0,3,0\}$, $\{3,0,0\}$, each with probability $1/27$. Ignoring the permutations and looking at the triplets in ascending rank order, I get $\{1,1,1\}$ with probability $1/9$, $\{0,1,2\}$ with probability $2/3$ and $\{0,0,3\}$ with probability $1/9$. In some sense (whether it is a nice sense or not, I don't know?) the expected rank ordered allocation is $\{2/9, 8/9, 17/9\}$ or instead, the normalized proportions are $\{0.222, 0.889, 1.889\}$.

Does that distribution have a standard name? If I want to know the similar proportions for 100 marbles amongst 100 boxes, what distribution should I be looking for? Answers to those questions or any other comments that might help elucidate what I'm looking or draw my attention to parallel problems at would be much appreciated.

Cheers,

Mark Diamond

Your problem is the base of combinatorics. The generating function $(a + b + c)^3$ gives 27 strings. Between them 3 (aab, aba, baa). These are reduced to a^2b , if you recognize only the number of marbles in boxes. The partitions classify all strings as x^2y .

Re: Name of a distribution.

kunzmilan

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